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Frequency Downshift in the Ocean[1] CAMILLE R. ZAUG, JOHN D. CARTER, Seattle University — Frequency downshift (FD) occurs when a measure of a waves frequency (typically its spectral peak or spectral mean) decreases monotonically. Carter *et al.* (2018) compared the efficacy of generalizations of the nonlinear Schrödinger equation (NLS) at modeling waves with and without FD in wave tank experiments. Narrow-banded swell traveling across the Pacific Ocean can also undergo FD, as evidenced in the classical paper of Snodgrass *et al.* (1966). In this work, we compare (i) NLS, (ii) dissipative NLS, (iii) the Dysthe equation, (iv) the viscous Dysthe equation, (v) the dissipative Gramstad-Trulsen equation, and (vi) the Islas-Schober equation to see which model best describes the ocean data reported in Snodgrass *et al.*, regardless of observed FD. We do so by comparing the Fourier amplitudes, spectral peak, spectral mean, and quantities representing mass and momentum between the ocean measurements and numerical simulations.

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